



Manhattan Area Retail Trade Analysis

C.D.Report # 229

Sreedhar Upendram

and

David L. Darling

Department of Agricultural Economics,
Kansas State University

K- STATE RESEARCH AND EXTENSION

OCTOBER 2004

INTRODUCTION

Manhattan's retailer businesses draw trade from primary, secondary and tertiary trade areas. The primary trade area is the geographical space from which local businesses capture trade in goods and services that are bought based on convenience and service. Some examples of the businesses that sell products that are highly influenced by these two motivating factors are plumbing services, vehicle repair services, dental care, banks, beauty salons, liquor stores, fast food restaurants, and florists.

The secondary trade area is the area from which local businesses capture trade in goods and services that are bought based on selection and price criteria. Some examples of the businesses that sell products that are highly influenced by these two motivating factors are shoe stores, clothing stores of all types, sporting good stores, discount departmental stores, specialty restaurants, furniture stores, and craft shops.

The Manhattan Town Center is a shopping center that has a collection of businesses that appeal to a regional market rather than just a local market. By concentrating clusters of departmental stores with specialty shops the Manhattan mall gains the benefit of a synergistic effect of the drawing power of all these businesses.

The tertiary trade area for Manhattan is impossible to map. People come from all over the world to visit Kansas State University and while in town shop in local stores. A more typical pattern is the football crowd in the fall that comes mainly from Kansas and surrounding states. The local Convention and Visitors' Bureau, part of the Manhattan Area Chamber of Commerce, monitors this activity. Hotel guest taxes paid by visitors who spend the night in Manhattan provide a measure of the size of an event.

Retail Analysis: The fiscal year 2003 City Trade Pull Factor for Manhattan is 1.15. This measure is based on sales tax collection data kept by the Kansas Department of Revenue. A Pull Factor of this magnitude indicates that the community of business in the city holds onto all of the local trade and brings in or “pulls in” another 15 percent more. In actuality Manhattan residents shop in Topeka and Kansas City but the offsetting patterns of area residents and outside visitors coming to shop in town covers up all signs of leakage or “out shopping”. Using this FY2003 City Trade Pull Factor (PF) allows the analysts to estimate the Trade Area Capture (TAC) that the Manhattan business community serves. The TAC is simply the product of the City population times the PF, 1.15. This number is 51,512 shoppers on a full-time equivalent basis.

Trade Area Analysis: The Manhattan estimated trade area for primary goods complete with cities that are smaller in size than Manhattan. These are Marysville to the north, Seneca to the northeast, Wamego to the east, Osage City to the southwest, Council Grove to the South, Herrington to the southwest, Junction City and retailers on Ft. Riley to the west, and Clay Center to the northwest. Residents of these places tend to shop at home for products bought based on convenience and service criteria.

Cities that are equal or larger in size than Manhattan include Lincoln, NE to the north, Salina to the west and Topeka to the east. To fill in the matrix of cities, we included 5 dummy cities 100 miles away and with a population of 10,000. These larger cities compete with Manhattan to attract retail trade in the region. The point at which people are indifferent between shopping in Manhattan or somewhere else determines the border of the trade area for Manhattan. The trade area limits for Manhattan according to this classification are: 62 miles to the north, 22 miles to the east, 64 to the south and 34 miles to the west. For statistical reasons we substituted Beatrice, NE for Lincoln, NE

and we put in Emporia as a competitor to the southeast. There is a Wal*Mart SuperCenter in Beatrice, Emporia, Salina, and Topeka. See Figure 1 to view a trade area map.

Figure 1. Manhattan Estimated Secondary Trade Area

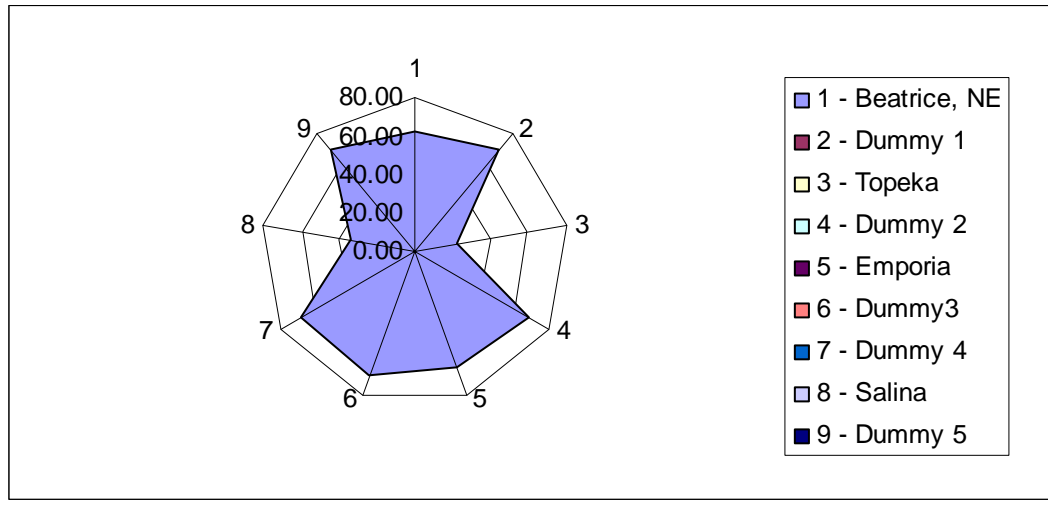


Table 1. Secondary Trade Area Coordinates

City	Population	Distance from Manhattan in Miles	Reilly's Factor
Manhattan, KS	46,803	0	-
Beatrice, NE	12,945	94.56	61.97
Dummy1	10,000	100	68.39
Topeka, KS	122,008	57.85	22.13
Dummy 2	10,000	100	68.39
Emporia, KS	26,666	112.37	64.04
Dummy 3	10,000	100	68.39
Dummy 4	10,000	100	68.39
Salina, KS	45,833	67.63	33.99
Dummy 5	10,000	100	68.39

The map in Figure 1 is based on data in Table 1. This estimate is one that shows the maximum reach of Manhattan retailers such as Target and businesses in the Manhattan Town Center. Table 1 shows the distance between the cities of Manhattan and cities within the trade area boundary as well as the Reilly's Factor. The Reilly's Factor is calculated based on the following formula:

$$\text{Reilly's Factor} = \frac{\text{Distance between the City X and City Y}}{1 + (\text{Population of X} / \text{Population of Y})^{1/2}}$$

where X is the smaller city and Y is the larger city.

Table 2. Trends Analysis from FY 1994 to 2004 of Manhattan Primary Trade Area

FY	Population	TAC	% market share	PF
1994	84,628	65,833	2.56	0.78
1995	85,063	67,270	2.61	0.79
1996	82,624	62,289	2.41	0.75
1997	81,392	62,333	2.4	0.77
1998	82,306	63,116	2.42	0.77
1999	82,306	64,373	2.46	0.78
2000	80,483	64,988	2.45	0.81
2001	78,135	63,536	2.41	0.81
2002	79,969	66,316	2.5	0.83
2003	83,097	67,802	2.56	0.82
2004	83,097	71,536	2.68	0.89

Table 2 shows the trends of Manhattan's retail performance. *The analysts combines data from Riley and Pottawatomie* counties to generate these data. Figure 2 is based on population, Trade Area Capture, percent market share, and Pull Factor statistics from Fiscal Year 1994 to 2004. Figure 2 is a graphical representation of estimated population and trade area capture numbers from FY 1994 to 2004. Figure 3 is a graphical representation of percent market shares and Pull Factors for trade area from FY 1994 to 2004. The Pull Factor is the measure of the relative strength of the retail business community, the Trade Area Capture is an estimate of the customer base and the percent market share shows the portion of the States retail pie. Household and per capita incomes are below the Kansas figures though out this period. This negatively impacts Pull Factors. Analysts often adjusted Pull Factors upwards to take account of this weak buying power. For example, the Manhattan Area two county PF in FY2002 is 0.83 but goes up to 0.94 after adjusting for income.

Figure 2. Comparison of Estimated Populations and TAC Numbers

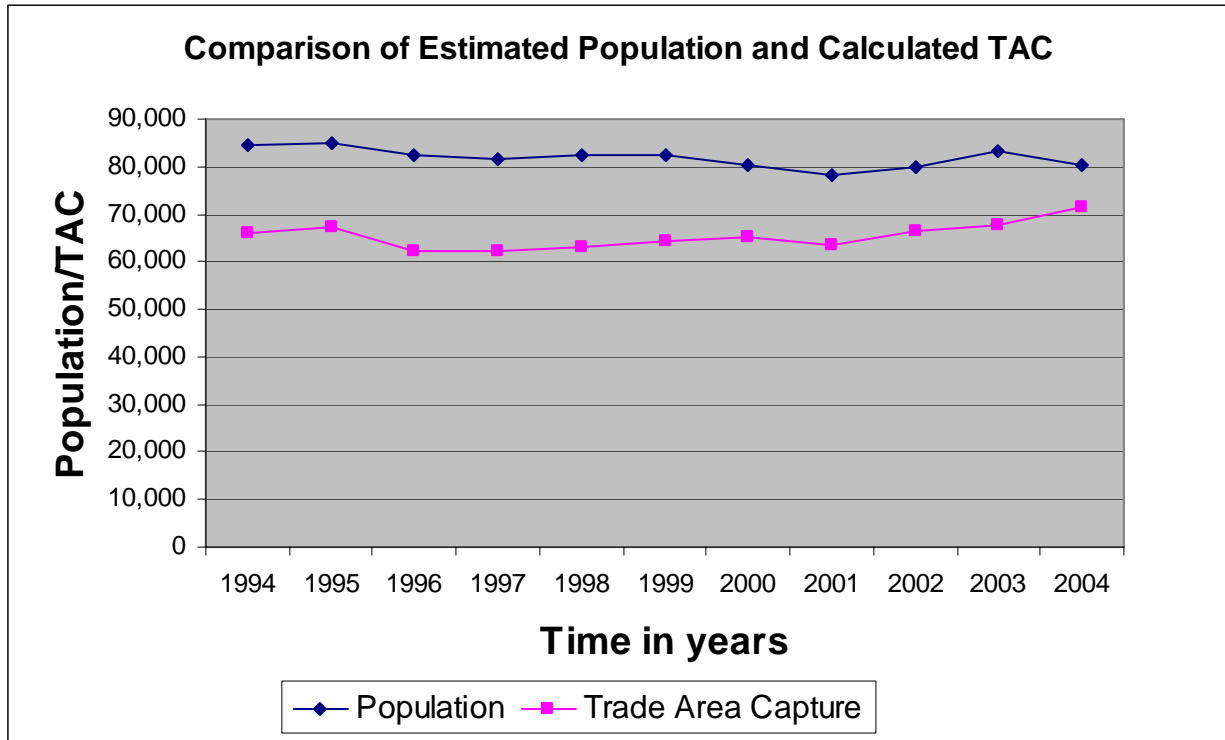
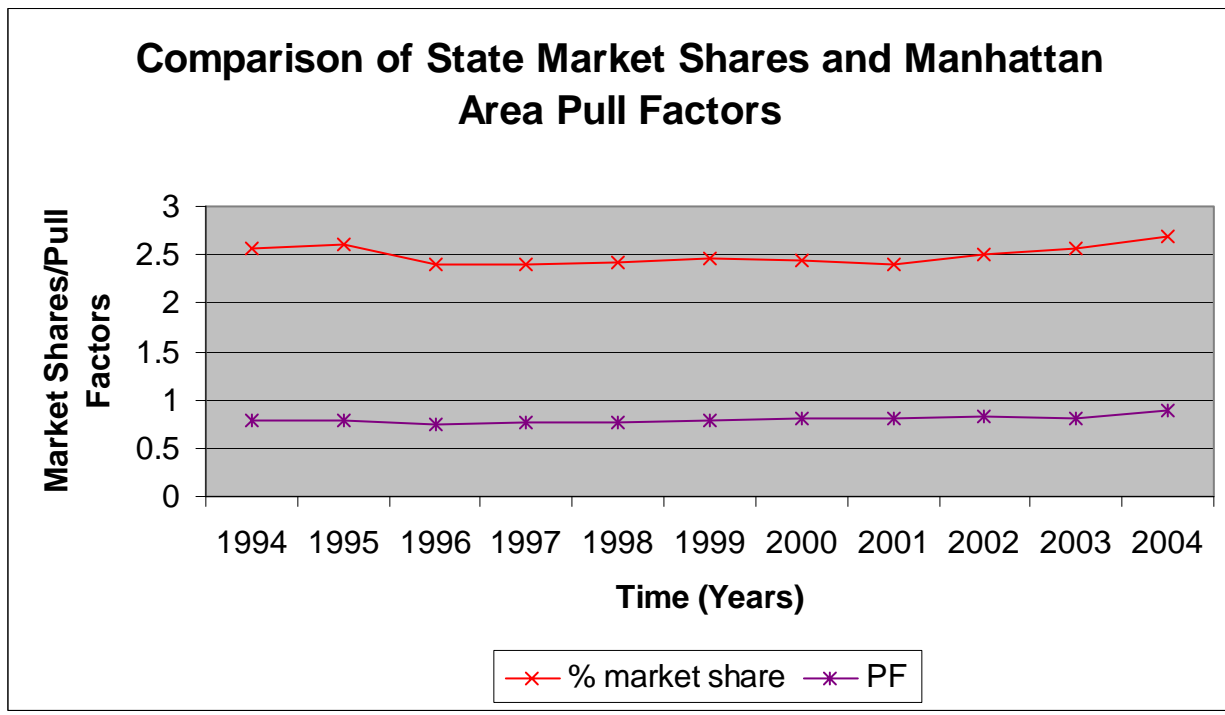


Figure 3. Comparison of State Market Shares and Manhattan Area Pull Factors



The Pull Factor for Manhattan increased from 1994 to 1995 but declined from 1995 to 1996. The Pull Factor then increased continuously from 1996 to 2002, declined slightly from 2002 to 2003 and increased from 2003 to 2004.

Table 3 shows a comparison of Pottawatomie and Riley Counties in Pull Factors, trade area captures and % market share of state from FY 1994 to 2004. Figure 4 is a graphical representation of a comparison of Pull Factors, Figure 5 is a graphical representation of a comparison of Trade Area Captures and Figure 6 is a graphical representation of a comparison of % market share of state for Pottawatomie and Riley Counties.

Table 3. Comparison of Pottawatomie and Riley County Pull Factors, Trade Area Captures and % Market Share of State

FY	Pull Factor		TAC		% Market Share of State	
	Pottawatomie	Riley	Pottawatomie	Riley	Pottawatomie	Riley
1994	1.35	0.63	23,470	42,363	0.91	1.65
1995	1.41	0.63	24,729	42,541	0.96	1.65
1996	1.31	0.60	23,459	38,830	0.91	1.50
1997	1.25	0.63	22,670	39,663	0.87	1.53
1998	1.31	0.61	24,471	38,645	0.94	1.48
1999	1.20	0.66	22,455	49,918	0.86	1.60
2000	1.32	0.66	23,891	41,097	0.90	1.55
2001	1.38	0.64	25,071	38,465	0.95	1.46
2002	1.44	0.67	26,280	39,920	0.99	1.51
2003	1.46	0.67	26,737	41,065	1.01	1.55
2004	1.42	0.73	26,363	45,172	0.99	1.69

Figure 4. Comparison of Pottawatomie and Riley County Pull Factors

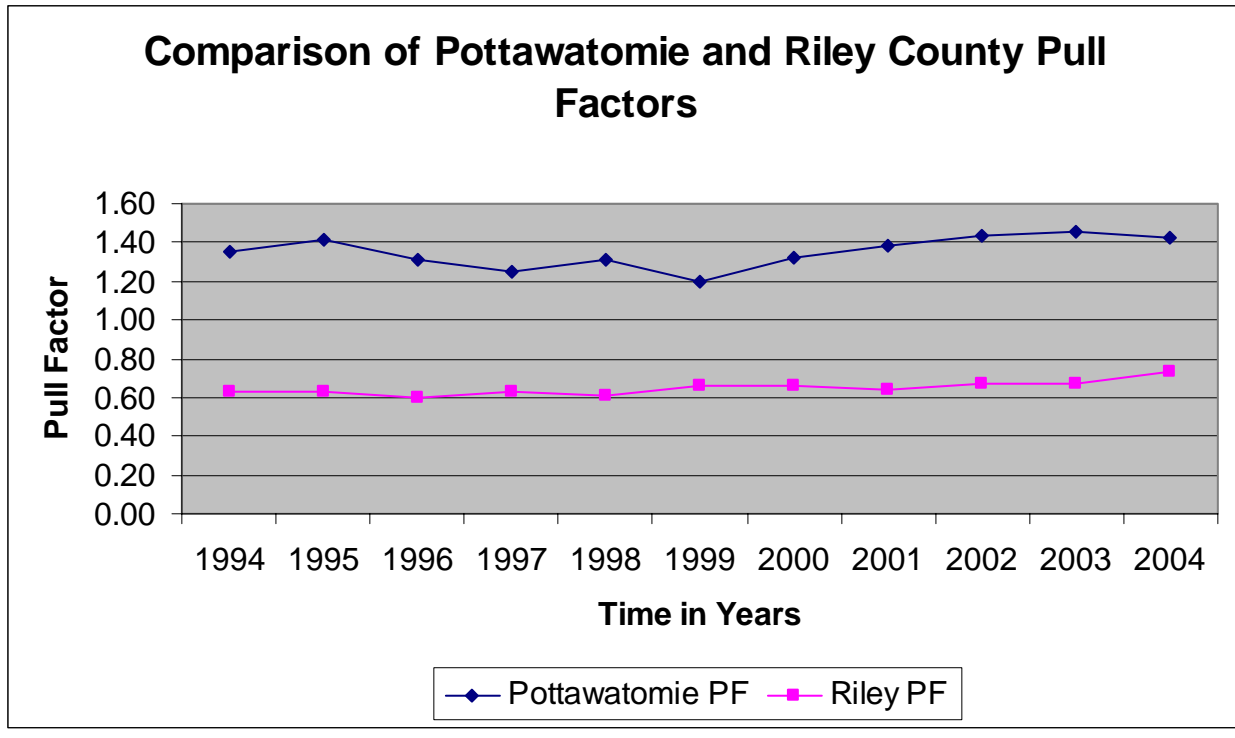


Figure 5. Comparison of Riley and Pottawatomie County Pull Factors for FY 2004

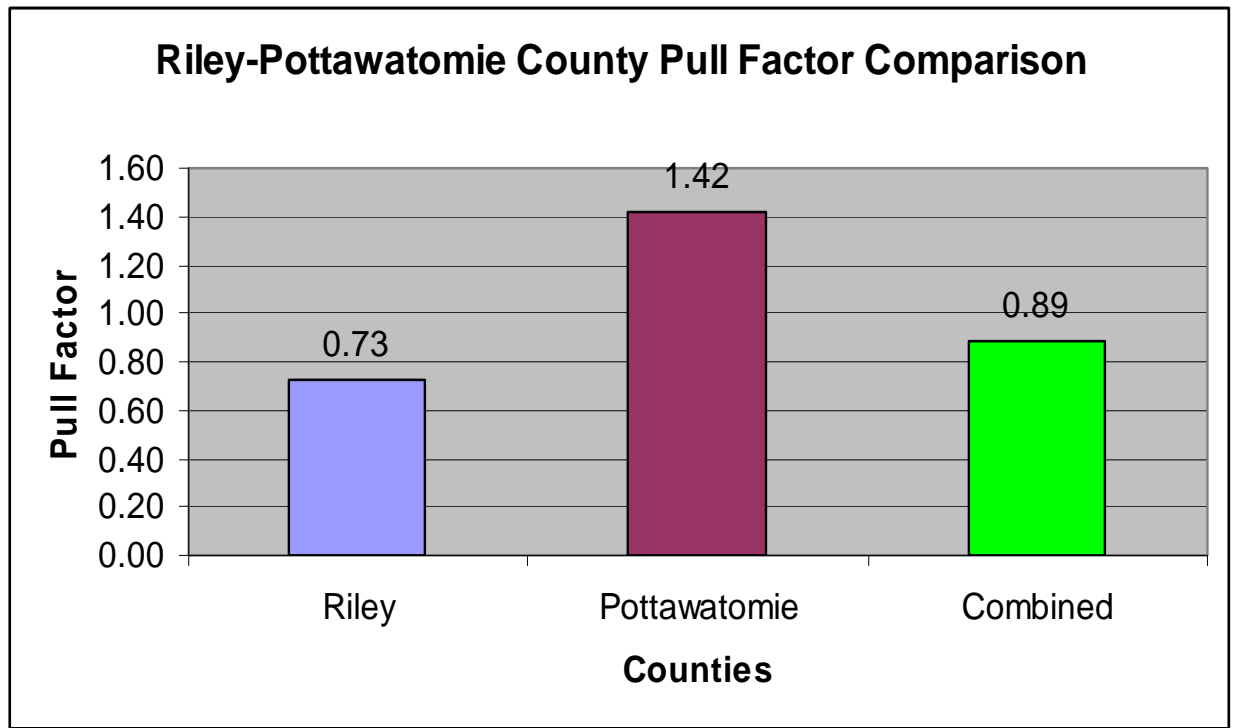


Figure 6. Comparison of Pottawatomie and Riley County Trade Area Captures

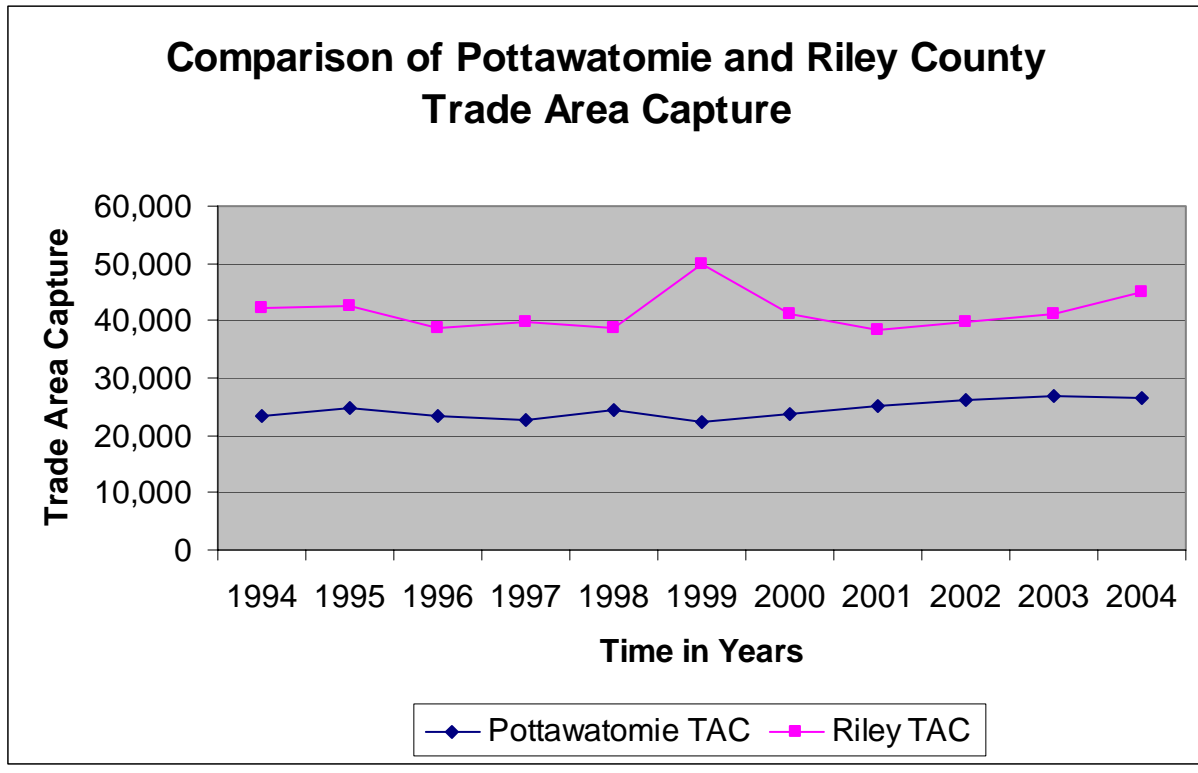
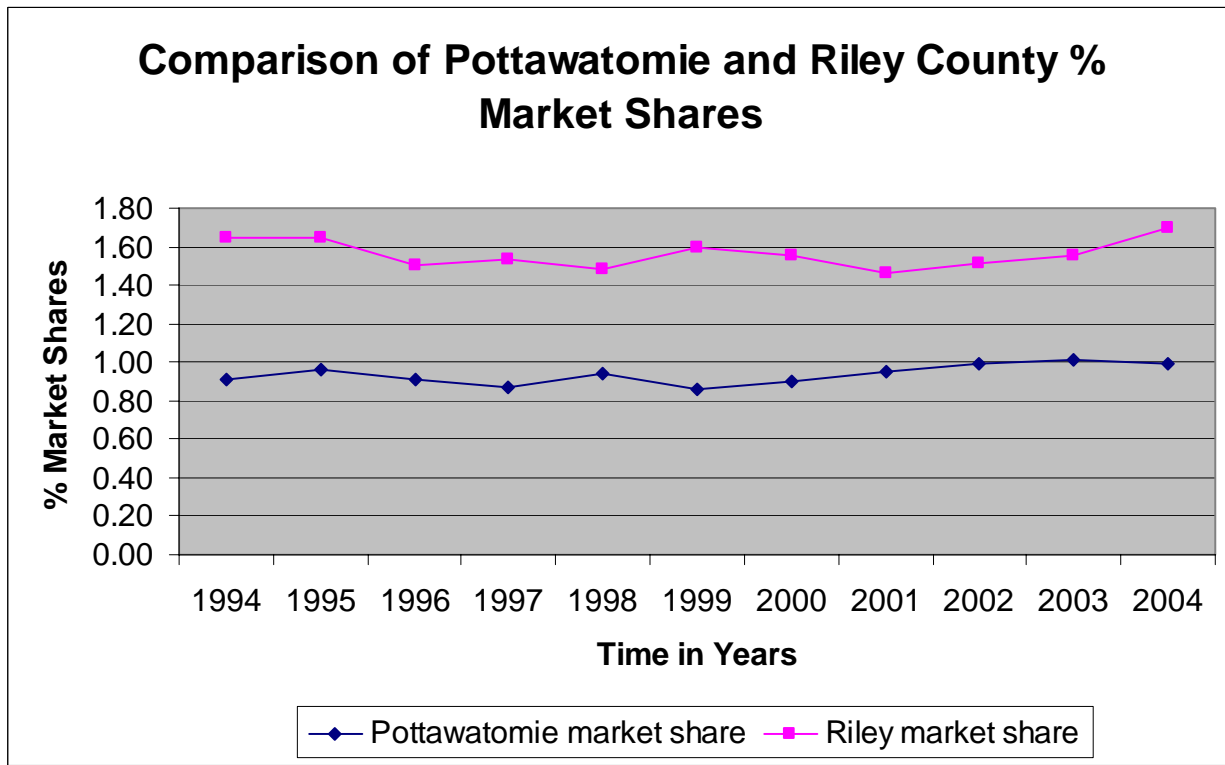


Figure 7. Comparison of Riley and Pottawatomie County % Market Share of the State



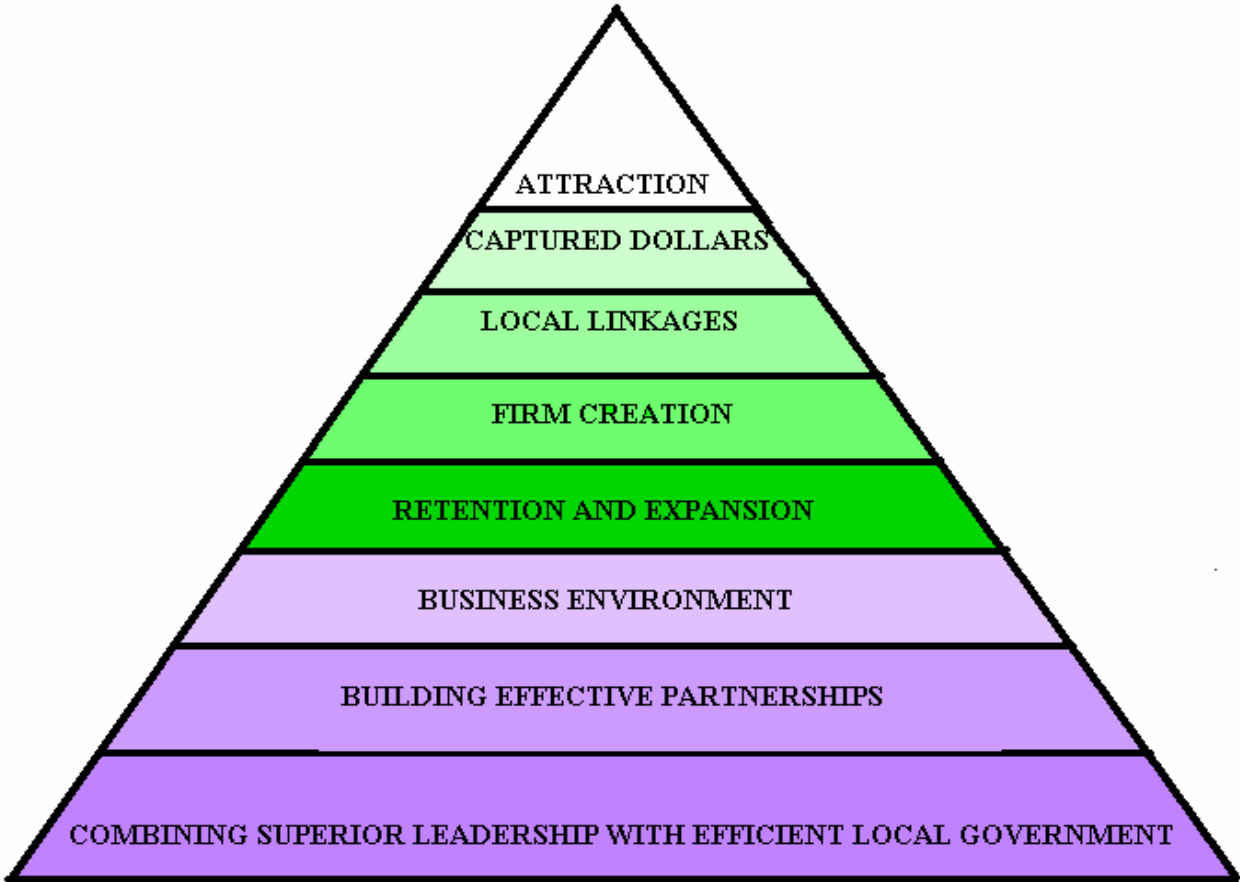
Conclusion

Based on the definition of the Manhattan Area Primary Market being Riley and Pottawatomie counties combined, the recent trend in population is negative until 2003. But, the Trade Area Captures and Pull Factors have improved through most of the period. This is a surprising result for two reasons – one, the primary trade area of the population has shrunk and two, the secondary trade area population has diminished also. The only possible explanation for the improvement in retail activity is that the tertiary trade area is generating additional retail activity.

In the future, a best case scenario would be for populations to grow and household incomes go up in the primary and secondary trade areas. This suggests that Manhattan retailers have a stake in the future of the regional economy. The region includes people and cities in Riley, Pottawatomie, Marshall, Washington, Clay, Dickinson, Geary, Morris, and Wabaunsee counties. See Figure 1 and Table 1.

Community Retailing and Store Retailing

Figure 8. Economic Development Pyramid



Appendix 1

Figure 9. Pull Factor Comparison

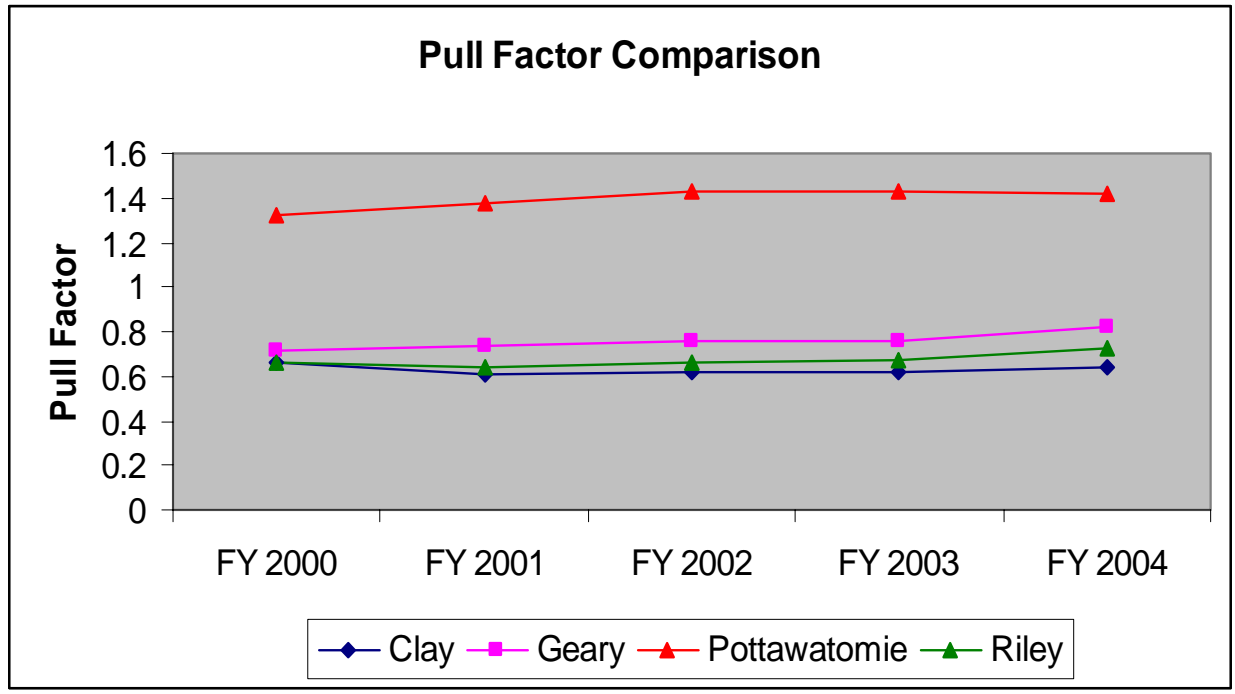


Figure 10. Trade Area Capture Comparison

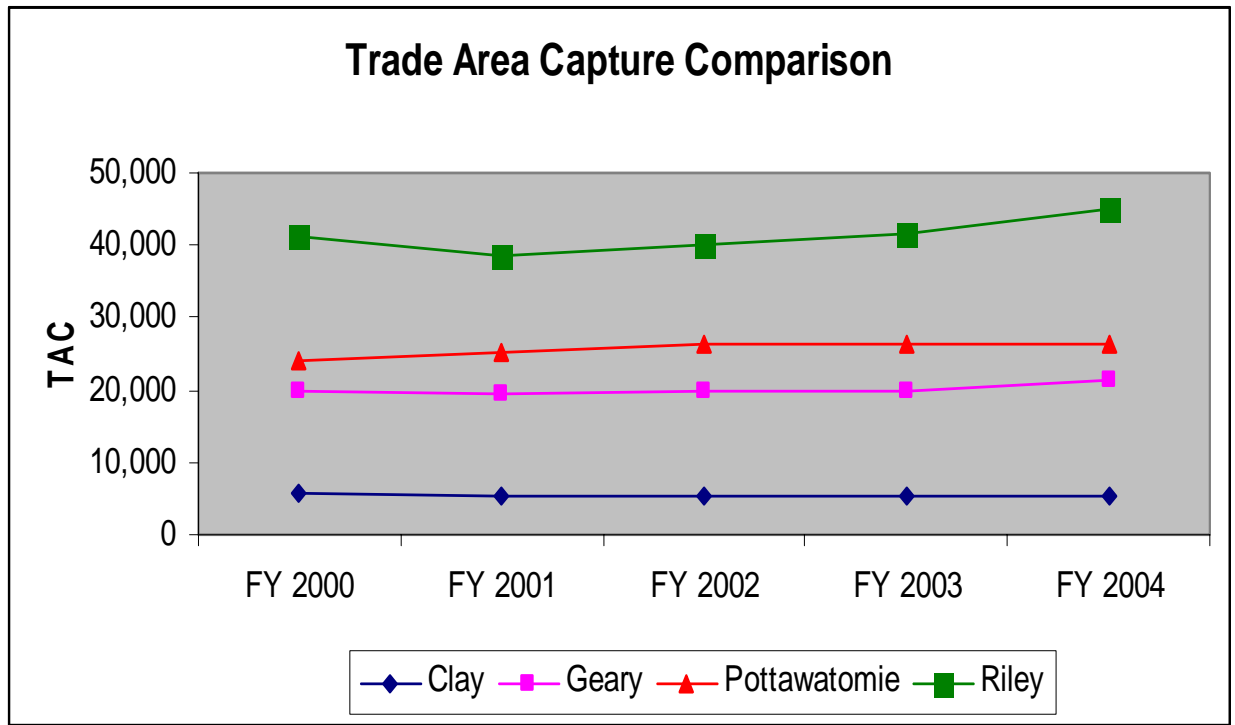
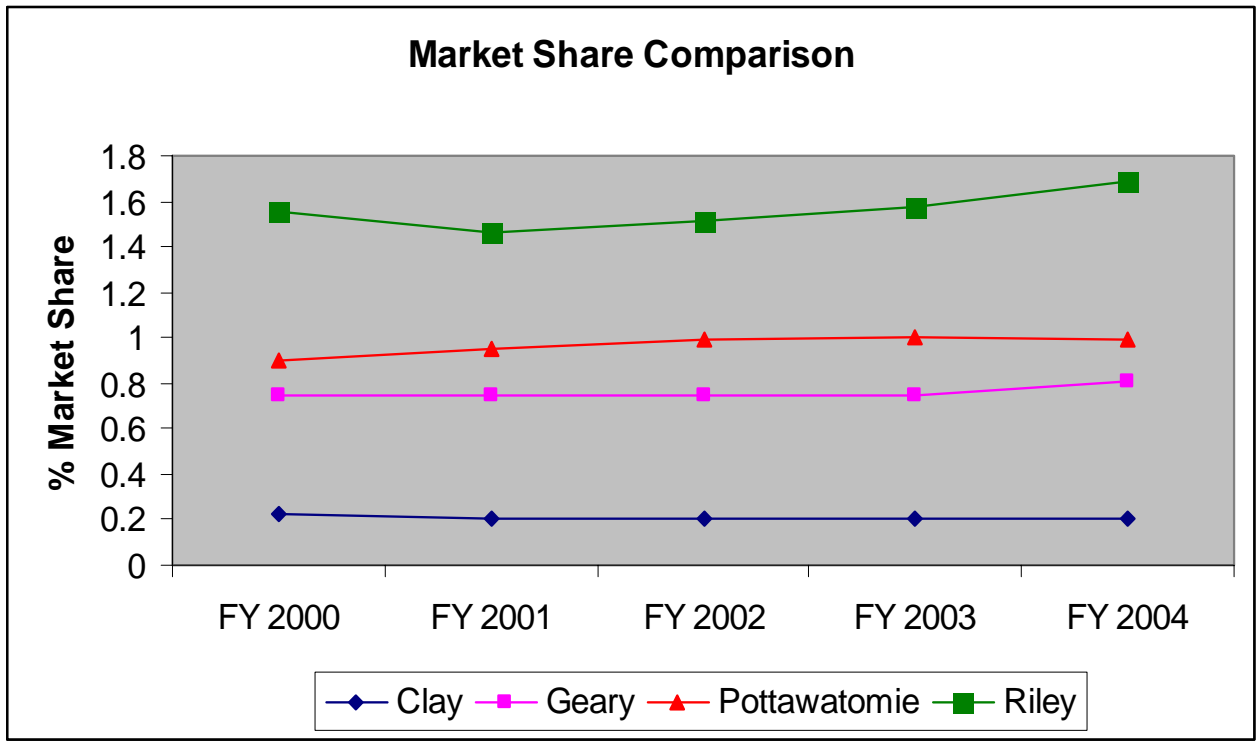


Figure 11. Market Share Comparison





**KANSAS STATE UNIVERSITY
AGRICULTURAL EXPERIMENT STATION AND COOPERATIVE EXTENSION
SERVICE**

**IT IS THE POLICY OF KANSAS STATE UNIVERSITY AGRICULTURAL
EXPERIMENT STATION AND COOPERATIVE EXTENSION SERVICE THAT ALL
PERSONS SHALL HAVE EQUAL OPPORTUNITY AND ACCESS TO ITS
EDUCATIONAL PROGRAMS, SERVICES, ACTIVITIES AND MATERIALS WITH
REGARD TO RACE, COLOR, RELIGION, NATIONAL ORIGIN, SEX, AGE, OR
DISABILITY. KANSAS STATE UNIVERSITY IS AN EQUAL OPPORTUNITY
ORGANIZATION. THESE MATERIALS MAY BE AVAILABLE IN ALTERNATIVE
FORMATS.**

“Knowledge for Life”

Cooperative Extension Service

David Darling
K-State Research and Extension
Department of Agricultural Economics
216 Waters Hall
Manhattan, KS 66506-4026
Phone:(785) 532-1512
Fax: (785) 532-6925
Email: ddarling@agecon.ksu.edu

Sreedhar Upendram
K-State Research and Extension
Department of Agricultural Economics
342 Waters Hall,
Manhattan, KS 66506-4011.
Phone: (785)-532-6709
Fax: (785) 532-6925
Email: sreedhar@agecon.ksu.edu